IN REPLY
REFER TO: Joint Interoperability Test Command (JTE)   **5 Mar 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Siemens HiPath 4000 from Version 5.0 to Version 6.0

References: (a) Department of Defense Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) Chairman, Joint Chiefs of Staff Instruction 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (f), see Enclosure 1

1. References (a) and (b) establish the Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Siemens HiPath 4000 with Software Version 5.0 was originally certified for joint use in the Defense Information System Network as a Private Branch Exchange (PBX) 1 and PBX 2, Reference (c). The vendor submitted a Desktop Review (DTR) as a formal request to change from Version 5.0 to 6.0, retest fixes for critical Information Assurance (IA) findings, and to retest Interoperability (IO) with Internet Protocol version (IPv)4/IPv6 Dual Stack capability. The JITC's Global Information Grid Network Test Facility (GNTF) at Fort Huachuca, Arizona conducted testing using product requirements derived from the Unified Capabilities Requirements (UCR), Reference (d), and test procedures, Reference (e). The SUT's certification status will be monitored during operational deployment. Any new discrepancy noted in the operational environment will be evaluated for impact on the existing certification. These discrepancies will be adjudicated to the satisfaction of Defense Information Systems Agency (DISA) via vendor Plan of Actions and Milestones that address all new critical discrepancies within 120 days of identification. The JITC does not certify any other configurations, features, or functions, except those cited in this memorandum, or authorized by the Program Management Office. This certification extension expires upon changes that affect interoperability, but no later than three years from the date of the original certification memorandum dated 6 January 2011.

3. JITC approves the extension of this certification for DTR 2. The DTR update included a change from Software Version 5.0 to 6.0, additional hardware, and changes in subcomponent software as specified in Table 1. Additionally, Figure 1 depicts the updated SUT certified test architecture. Approval is based on Verification and Validation testing with no IO findings conducted at JITC's GNTF, from 23 January through 3 February 2012. The security testing completed by DISA-led IA test teams is published in a separate IA report, Reference (f). The DISA IA CA approval was granted on 29 February 2012.

Table 1. Tested System Configurations

System Name	Software Release		
Nokia-Siemens EWSD	19d with Patch Set 46		
Avaya S8720	Communication Manager (CM) 4.0 (R014x.00.2.732.1: Super Patch 16538)		

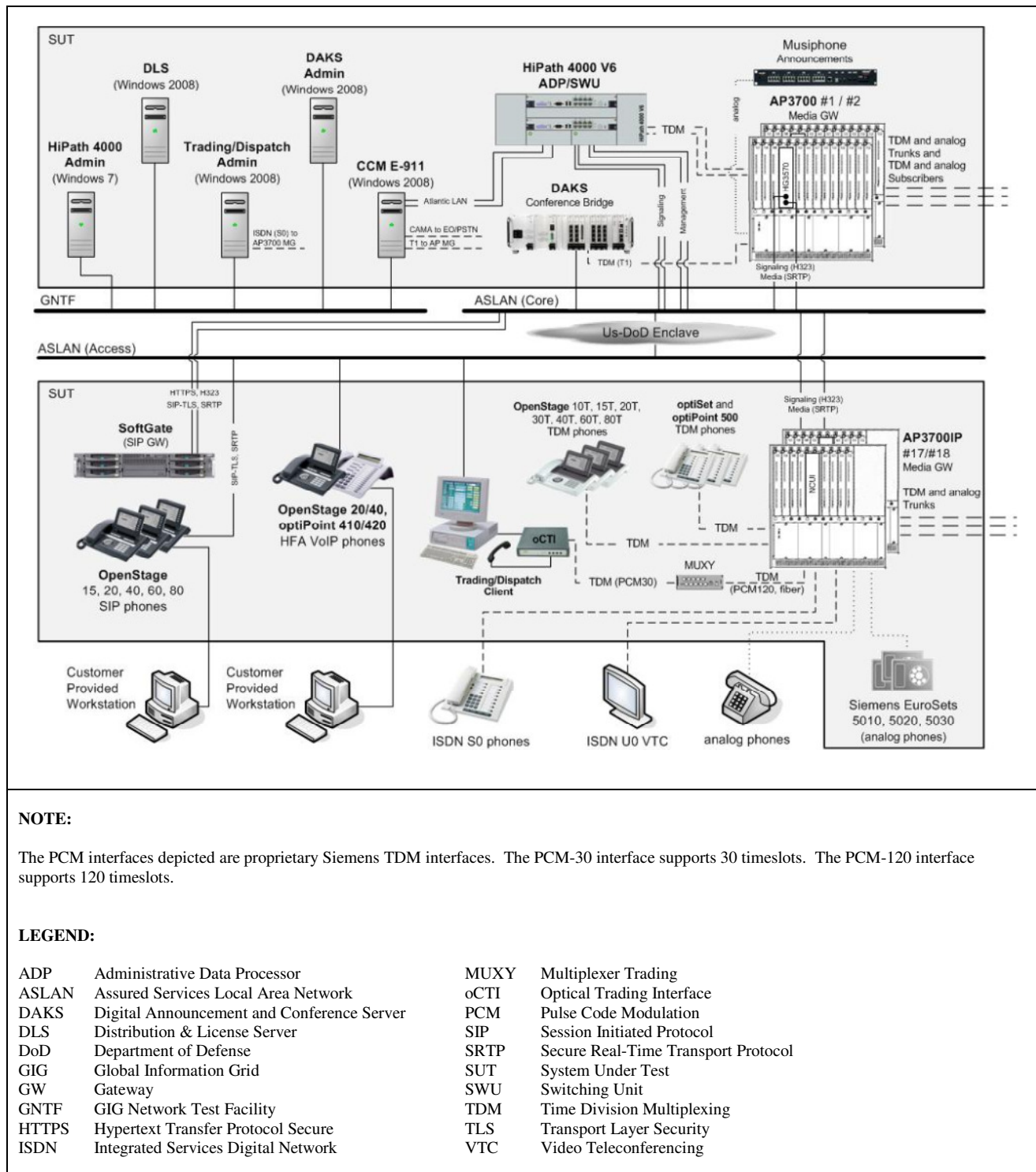| System Name	Hardware/Software Release (see note)		
	Hardware	**Card Name** **Part Number/Name**	**Application/Software**
HiPath 4000 Version 6 (SUT)	HiPath 4000 Admin	NA	ActivClient CAC x86 v6.2
			ComWin/HiPath 4000 Expert Access 5.0.108.0
			Internet Explorer 8
			MS Windows 7 SP1
			Tumbleweed Desktop Validator 4.10
	DLS	NA	**ActivClient CAC x86 v6.2**
			Deployment Service v6 R0.7.0
			MS Windows Server 2008 SP2
			Tumbleweed Desktop Validator 4.10
	Trading/Dispatch Admin	NA	ActivClient CAC x86 v6.2
			HiPath Trading v3 v3.4.0-A-A_3
			MS Windows Server 2008 SP2
			Tumbleweed Desktop Validator 4.10
	DAKS Admin	NA	ActivClient CAC x86 v6.2
			MS Windows Server 2008 SP2
			Tetronik DAKS Release 7 7.62b.0000
			Tumbleweed Desktop Validator 4.10
	CCM E-911	NA	ActivClient CAC x86 v6.2
			Callcenter E-911 Base System SW 3.0
			Callcenter E-911 CAD Server SW 2.2
			Callcenter E-911 Reporting Server v2.8
			Callcenter Historical Reports v2.8
			Callcenter Test Facility v1.8
			MS Windows 2008 SP2
			Siemens HiPath CAP 3.12.030.0
			Tumbleweed Desktop Validator 4.10
		Amtelco PCI Express 8-Span T1 Board 259L002	MicroAutomation Proprietary Embedded
		Amtelco 24-port Station Board 259L031	MicroAutomation Proprietary Embedded

Table 1. Tested System Configurations (Continued)

System Name	Hardware/Software Release[see note]		
	Hardware	**Card Name** **Part Number/Name**	**Application/Software**
HiPath 4000 Version 6 (SUT)	HiPath 4000 V6 ADP/SWU	**DSCXL (X2)**	Apache 2.2.21
			Assistant v6 R2.11.54
			SUSE Linux Enterprise Server (SLES) 11 SP1
			Tomcat 5.5.27-0.16.1
			RMX v6 R2.4.0
			CSTA v1 R12.205.0
	DAKS Conference Bridge	PRA-41	DAKS Classic 7.6.1.b-gb4bd98b
		CPC-41	tetronik AEN Linux distribution V 1.04
	Musiphone Announcements	NA	2004 Model
	AP3700 #1 Media GW	RG	HiPath 4000 v6
		RG	
		SLMQ	
		SLMA24 (x2)	
		SLMOP	
		STMI4/HG3570	
		SLMA24	
		LTUCA	Siemens proprietary embedded v6
		STMI4/HG3530	HiPath 4000 v6
		DIU2U (x4)	
		TMOM2 (x2)	
	AP3700 #2 Media GW	SLMY	HiPath 4000 v6
		STMD3	
		DIU2U (x2)	
		TMDNH	
		SICO (x2)	
		LTUCA	Siemens proprietary embedded v6
		DIU-N2 (x4)	HiPath 4000 v6
		STMI4/HG3570	
	SoftGate (SIP GW)	NA	**L0-T3T.6Z.001-005**
	Trading/Dispatch Client	NA	ActivClient CAC x86 v6.2
			HiPath Trading optiClient V3R4
			MS Windows 7 SP1
			Tumbleweed Desktop Validator 4.10
	oCTI	NA	**HiPath Trading** **Client v3.4.03**
	MUXY	NA	HiPath Trading v3
	AP3700IP #17 Media GW	RG	HiPath 4000 v6
		SLMA24	
		SLMO	
		STMI4/HG3530	
		STMD3	
		NCUI4/HG3575	
		DIU2U (x4)	
		HDMO/EP	
		DSCXL2/EP	CSTA v1 R12.205.0
			RMX v6 R2.4.0
			SUSE Linux Enterprise Server (SLES) 11 SP1
		PSU/EP (x2)	NA

3

Table 1. Tested System Configurations (Continued)

System Name	Hardware/Software Release[(see note)]		
	Hardware	**Card Name**	**Application/Software**
		Part Number/Name	
HiPath 4000 Version 6 (SUT)	AP3700IP #18 Media GW	SLMY	HiPath 4000 v6
		SLMAE	
		DIUT2	
		NCUI4/HG3575	
		TMEMUS	
SUT Telephone Instruments			
Telephone type	**Model (s)**	**Software/Firmware**	
Analog	Siemens Eurosets 5010, 5020, 5030	NA	
IP	**OpenStage** 15,20,40,60, **80 SIP**	**V3 R0.60.0**	
	OpenStage HFA VoIP 20/40	V1 R3.15.11	
	optiPoint HFA VoIP 410/420	V5 R5.8.5	
TDM	OpenStage 10T	embedded	
	OpenStage 15T/20T/30T/40T	V2 R0.6.0	
	OpenStage 60T/80T	**V2 R0.6.5.1**	
	optiSet	embedded	
	optiPoint 500	embedded	

NOTE:

The hardware/software versions underlined and bolded in this table denote changes from the original SUT certification of Software Version 5.0.

LEGEND:

		oCTI	OptiClient Trading Interface
ADP	Administrative Data Processor	R	Revision
CM	Communication Manager	SIP	Session Initiation Protocol
CAC	Common Access Card	SP	Service Pack
DAKS	Digital Announcement and Conference Server	SUT	System Under Test
DLS	Distribution and License Server	SWU	Switching Unit
EWSD	Elektronisches Wählsystem Digital	TDM	Time Division Multiplexing
GW	Gateway	V	Version
IP	Internet Protocol	VoIP	Voice over Internet Protocol
MS	Microsoft	XP	Experience
MUXY	Multiplexer (Siemens identifier "Y")		
NA	Not Applicable		

NOTE:

The PCM interfaces depicted are proprietary Siemens TDM interfaces. The PCM-30 interface supports 30 timeslots. The PCM-120 interface supports 120 timeslots.

LEGEND:

ADP	Administrative Data Processor	MUXY	Multiplexer Trading
ASLAN	Assured Services Local Area Network	oCTI	Optical Trading Interface
DAKS	Digital Announcement and Conference Server	PCM	Pulse Code Modulation
DLS	Distribution & License Server	SIP	Session Initiated Protocol
DoD	Department of Defense	SRTP	Secure Real-Time Transport Protocol
GIG	Global Information Grid	SUT	System Under Test
GW	Gateway	SWU	Switching Unit
GNTF	GIG Network Test Facility	TDM	Time Division Multiplexing
HTTPS	Hypertext Transfer Protocol Secure	TLS	Transport Layer Security
ISDN	Integrated Services Digital Network	VTC	Video Teleconferencing

Figure 1. SUT Test Configuration

JITC Memo, JTE, Extension of Special Interoperability Test Certification of the Siemens HiPath 4000 from Version 5.0 to Version 6.0

4. The interoperability test summary of the SUT is indicated in Table 2. The PBX 1 Capability Requirements (CRs) and Feature Requirements (FRs) are listed in Table 3.

Table 2. **SUT Interoperability Test Summary**

DISN Trunk Interfaces			
Interface & Signaling	**Critical**	**Status**	**Remarks**
T1 CAS (DTMF, DP)	No	Certified	Met all critical CRs and FRs
E1 CAS (DTMF, DP)	No (Europe only)	Certified	Met all critical CRs and FRs.
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Certified	Met all critical CRs and FRs with the following exception: The SUT does not support NFAS.[2]
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)	Certified	Met all critical CRs and FRs.
DISN Line Interfaces			
Interface & Signaling	**Critical**	**Status**	**Remarks**
2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all critical CRs and FRs with the following exception. Analog phones do not support call waiting or precedence call waiting.[3]
ISDN BRI NI 1/2 (ANSI T1.619a)	No	Certified	The SUT met all critical CRs and FRs for the ISDN BRI S/T interface with the following minor exceptions: The ISDN BRI S/T interface does not support Call Transfer or Three-Way-Calling.[4] The SUT does not support ISDN BRI U interface. ISDN BRI is not a required interface for a PBX 1. There is no risk associated with the SUT not supporting this interface.
2-Wire Proprietary Digital	No	Certified	Met all critical CRs and FRs.
VoIP (Ethernet IEEE 802.3u)	No	Certified	Met all critical CRs and FRs.
DISN Features and Capabilities			
Features and Capabilities	**Critical**	**Status**	**Remarks**
Common Features	Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: The SUT does not provide the exact conference disconnect tone in accordance with the UCR.[5] The SUT fails to provide a 0.5 second ring on phone provisioned with Call Forward Variable.[6] Analog phones do not support Call Waiting.[3]
Attendant	No	Not Tested	This feature is supported by the SUT; however it was not tested. The feature is therefore not certified by JITC. This is not a required feature for a PBX 1.

Table 2. SUT Interoperability Test Summary (continued)

DISN Features and Capabilities (continued)			
Features and Capabilities	**Critical**	**Status**	**Remarks**
Public Safety	Yes	Certified	The SUT met all critical CRs and FRs for Basic 911. Additionally the SUT met the following non-critical CRs and FRs: Tracing of a Terminating Call, Outgoing Call Tracing, and Trace of a Call in Progress.
Conferencing	No	Certified	This feature is supported by the SUT. This is not a required feature for a PBX 1.
Nailed-up Connections	No	Not Tested	This feature is not supported by the SUT. This is not a required feature for a PBX1. There is no risk associated with the SUT not supporting this feature.
DISN Hotline Services	No	Not Tested	This feature is supported by the SUT. This is not a required feature for a PBX 1.
MLPP	Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: Analog phones do not support call waiting or precedence call waiting.[3] The SUT does not support Loss of C2 User announcement.[7]
Call Processing	Yes	Certified	Met all critical CRs and FRs.
ISDN Services	Yes	Certified	Met all critical CRs and FRs.
Synchronization	Yes	Certified	Met all critical CRs and FRs.
Reliability	Yes	Certified	Met all critical CRs and FRs.
Network Management	No	Certified	Met all CRs and FRs with an IEEE 802.3u interface.
Security	Yes	Certified	See note 8.
VoIP System	No	Certified	Met all critical CRs and FRs.
Softphone	No	Certified	Met all critical CRs and FRs.
Network Gateways			
Gateway	**Interface & Signaling**	**Critical**	**Status**	**Remarks**
PSTN	T1 CAS (DTMF, DP)	No	Certified	Met all critical CRs and FRs.
	E1 CAS (DTMF, DP)	No (Europe only)	Certified	Met all critical CRs and FRs.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Certified	Met all critical CRs and FRs.
	E1 ISDN PRI (ITU-T Q.931)	No (Europe only)	Certified	Met all critical CRs and FRs.
	Ground Start Line	Yes	Certified	Met all critical CRs and FRs.

NOTES:

1   The SUT T1 CAS wink start recognition is not within specification in accordance with the UCR, paragraph 5.2.4.3.5. The requirement is to recognize a wink start signal from 100 ms to 350 ms. The SUT recognizes a wink start signal from 85 ms to 365 ms. This discrepancy was previously adjudicated by DISA as having minor operational impact.

2   The SUT does not support NFAS on their ISDN PRI NI2 interface. This was adjudicated by DISA on 17 December 2008 as having a minor operation impact. Furthermore, DISA, in coordination with the Joint Staff, stated their intent to modify the next update of the UCR to change NFAS for a PBX 1 from required to conditional.

3   The SUT analog end instruments do not support the following required features: Call Waiting or Precedence Call Waiting. This was adjudicated by DISA on 21 July 2009 as having minor operational impact.

4   The SUT ISDN BRI S/T interface does not support Call Transfer or Three-Way Calling. This was adjudicated by DISA on 21 July 2009 as having minor operational impact.

5   The SUT does not provide the correct conference disconnect tone in accordance with the UCR, Table 5.2.4-5. This was adjudicated by DISA on 21 July 2009 as having minor operational impact.

6   The SUT does not provide 'Ping' Ring when CFV is activated. This was adjudicated by DISA on 21 February 2009 as having a minor operational impact. Also, this is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.

7   The SUT does not support the Loss of C2 announcement. This announcement is invoked only when a DISN subscriber is automatically routed to a non-MLPP network. DISA adjudicated this anomaly as having a minor operational impact because this announcement would rarely be invoked on a PBX 1. Furthermore, DISA, in coordination with the Joint Staff, stated their intent to modify the next update of the UCR to change the Loss of C2 announcement from required to conditional for a PBX 1.

8   Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (c).

Table 2. SUT Interoperability Test Summary (continued)

LEGEND:

802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	LoC	Letter of Compliance
ANSI	American National Standards Institute	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements
BRI	Basic Rate Interface	Mbps	Megabits per second
C2	Command and Control	MLPP	Multi-Level Precedence and Preemption
CAS	Channel Associated Signaling	ms	milliseconds
CFV	Call Forward Variable	NFAS	Non-Facility Associated Signaling
CR	Capability Requirements	NI 1/2	National ISDN Standard 1 or 2
DISA	Defense Information Systems Agency	PBX 1	Private Branch Exchange 1
DoD	Department of Defense	PRI	Primary Rate Interface
DISN	Defense Information System Network	PSTN	Public Switched Telephone Network
DTMF	Dual Tone Multi-Frequency	Q.931	Signaling Standard for ISDN
E1	European Basic Multiplex Rate (2.048 Mbps)	Q.955.3	ISDN Signaling standard for E1 MLPP
FR	Feature Requirements	S/T	ISDN BRI 4-wire interface
GR	Generic Requirement	SUT	System Under Test
GR-506-CORE	LSSGR: Signaling for Analog Interfaces	T1	Digital Transmission Link Level 1 (1.544 Mbps)
IEEE	Institute of Electrical and Electronics Engineers	T1.607	ISDN Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
ISDN	Integrated Services Digital Network	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	U	ISDN BRI 2-wire interface
		UCR	Unified Capabilities Requirements
JITC	Joint Interoperability Test Command	VoIP	Voice over Internet Protocol

Table 3. PBX 1 Requirements

DISN Trunk Interfaces				
Interface	**Critical**		**Requirements** **Required or Conditional**	**References**
T1 CAS (MFR1, DTMF, DP)	No	Trunking	• Direct Inward Dialing (C) • National ISDN 1/2 Primary Access (R: PRI only) • ISDN ANSI MLPP Service Capability (R: PRI only) • ITU-T ISDN Primary Access (C: E1 PRI only) • ITU-T ISDN Primary Access DSS1 MLPP (C: E1 PRI only) • Trunk Group-Remove from Service (C) • Trunk Group-Restore to Service (C) • Normal Wink Start Operations (C: CAS only) • Glare Operation (C: CAS only) • Abnormal Wink Start (C: CAS only) • Glare Resolution (C: CAS only) • Call for Service Timing (R: CAS only) • Guard Timing (R: CAS only) • Satellite Timing (C: CAS only) • Disconnect Control (C: CAS only) • Reselect and Retrial (C: CAS only) • Off-Hook Supervision Transition (C: CAS only) • Dial-Pulse Signals (C: CAS only) • DTMF Signaling (C: CAS only) • Standard Digit Format for Precedence (C: CAS only) • MFR1 2/6 Signaling (C: CAS only) • Alerting Signals and Tones (R) • DISN ISDN User-to-Network Signaling (R: PRI only) • Application (R: PRI only) • Physical Layer (R: PRI only) • Data Link Layer (R: PRI only) • Data Link Connection (R: PRI only) • Peer-to-Peer Procedures of Data-Link Layer (R: PRI only) • Layer 3 DISN User-to-Network Signaling (R: PRI only) • DISN User-to-Network Signaling for Circuit-Switched Bearer Services (R: PRI only)	• UCR Section 5.2.1.3.2 • UCR Section 5.2.1.3.4.1 • UCR Section 5.2.1.3.4.1.1 • UCR Section 5.2.1.3.4.2 • UCR Section 5.2.1.3.4.2.1 • UCR Section 5.2.1.5.5 • UCR Section 5.2.1.5.5 • UCR Section 5.2.4.3.3.1.1 • UCR Section 5.2.4.3.3.1.2 • UCR Section 5.2.4.3.3.2.1 • UCR Section 5.2.4.3.3.2.2 • UCR Section 5.2.4.3.5 • UCR Section 5.2.4.3.6 • UCR Section 5.2.4.3.7 • UCR Section 5.2.4.3.8 • UCR Section 5.2.4.3.9 • UCR Section 5.2.4.3.10 • UCR Section 5.2.4.4.1 • UCR Section 5.2.4.4.2 • UCR Section 5.2.4.4.2.1 • UCR Section 5.2.4.4.3 • UCR Section 5.2.4.5.1 • UCR Section 5.2.4.7.1 • UCR Section 5.2.4.7.1.1 • UCR Section 5.2.4.7.1.2 • UCR Section 5.2.4.7.1.3 • UCR Section 5.2.4.7.1.3.1 • UCR Section 5.2.4.7.1.3.2 • UCR Section 5.2.4.7.1.4 • UCR Section 5.2.4.7.1.4.2
E1 CAS (MFR1, DTMF, DP)	No (Europe only)			
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes		• Sequence of Messages for DISN Circuit Switched Calls (R: PRI only) • Message Functional Definition and Content (R: PRI only) • General Message Format and Information Elements Coding (R: PRI only) • Supplementary Services (C: PRI only) • DISN Transmission Interface (R) • PCM-24 Digital Trunk Interface (R) • Interface Characteristics (R) • Supervisory Channel Associated Signaling (C: CAS only) • Clear Channel Capability (R) • Alarm and Restoral Requirements (R) • PCM-30 Digital Trunk Interface (Europe only) (C) • Supervisory Channel Associated Signaling (C: E1 only) • Alarm and Restoral Requirements (C: E1 only) • Interoperation of PCM-24 and PCM-30 (C) • Analog Trunk Interface (C)	• UCR Section 5.2.4.7.1.4.3 • UCR Section 5.2.4.7.1.4.4 • UCR Section 5.2.4.7.1.4.5 • UCR Section 5.2.4.7.1.4.6 • UCR Section 5.2.5 • UCR Section 5.2.6.1 • UCR Section 5.2.6.1.1 • UCR Section 5.2.6.1.2 • UCR Section 5.2.6.1.3 • UCR Section 5.2.6.1.4 • UCR Section 5.2.6.2 • UCR Section 5.2.6.2.1 • UCR Section 5.2.6.2.2 • UCR Section 5.2.6.3 • UCR Section 5.2.6.4
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)			

Table 3. PBX 1 Requirements (continued)

Interface	Critical	Requirements Required or Conditional		References
DISN Trunk Interfaces (continued)				
T1 CAS (MFR1, DTMF, DP)	No	Voice	• MOS (R) • Secure calls (R)	• CJCSI 6215.01C • CJCSI 6215.01C
E1 CAS (MFR1, DTMF, DP)	No (Europe only)	Facsimile	• Analog: ITU-T T.4 (R)	• DISR
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Data	• Modem (VBD) (R) • 56 kbps switched data (R: PRI only) • 64 kbps switched data (R: PRI only) • NX56 synchronous BER (R: PRI only) • NX64 synchronous BER (R: PRI only) • Secure data (STE/STU-III) (R)	• CJCSI 6215.01C • UCR Section 5.2.2.9.6 • UCR Section 5.2.2.9.6 • UCR Section 5.2.2.9.6 • UCR Section 5.2.2.9.6 • CJCSI 6215.01C
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)	VTC	• ITU-T H.320 (R: PRI only)	• FTR 1080B-2002
DISN Line Interfaces				
2-Wire Analog	Yes	Access	• Directory Number Identification (R) • PBX Line (C) • National ISDN 1/2 Basic Access (C) • Analog Line (R) • Basic Line Test Capabilities (R) • Advanced Line Test Capabilities (C) • Loop Start Line (R: 2-Wire Analog only) • Reverse Battery (R) • Alerting Signals and Tones (R) • S/T Reference Point (ISDN BRI) (C) • VoIP System Requirements (R: VoIP Phones only)	• UCR Section 5.2.1.1.1 • UCR Section 5.2.1.3.1 • UCR Section 5.2.1.3.3 • UCR Section 5.2.1.3.5 • UCR Section 5.2.1.5.4.1.1 • UCR Section 5.2.1.5.4.1.1 • UCR Section 5.2.4.2.1 • UCR Section 5.2.4.3.1 • UCR Section 5.2.4.5.1 • UCR Section 5.2.4.7.1.2.1 • UCR Section 5.2.12.8
ISDN BRI NI 1/2 (ANSI T1.619a)	No			
2-Wire Proprietary Digital	No	Voice	• MOS (R) • Secure Calls (R)	• CJCSI 6215.01C • CJCSI 6215.01C
		Facsimile	• Analog: ITU-T T.4 (R)	• DISR
VoIP (Ethernet IEEE 802.3u)	No	Data	• Modem (VBD) (R: 2-Wire Analog only) • Secure data (STE/STU-III) (R: 2-Wire Analog only)	• CJCSI 6215.01C • CJCSI 6215.01C
		VTC	• ITU-T H.320 (C: BRI only)	• FTR 1080B-2002
DISN Features & Capabilities				
Feature/ Capability	**Critical**	**Requirements Required or Conditional**		**References**
Common Features	Yes	• Individual Lines (R) • Denied originating service (C) • Code restriction and diversion (C) • Call waiting (R) • Three-way calling (R) • Add-on transfer, conference calling, and call hold (C) • Call Transfer Individual - All calls (R) • Call Transfer - Internal Only (R) • Call Transfer - Individual - Incoming Only/Add-On Consultation Hold - Incoming Call (R) • Call Transfer - Outside (R) • Call Transfer - Add-On to Fully Restricted Station (C) • Call Transfer - Attendant (C) • Call Hold (R) • Conference Calling - Six Way Station Controlled (C) • Call Forwarding Variable (R) • Call Forward Busy Line (R) • Call Forwarding - Don't Answer - All Calls (R) • Selective Call Forwarding (C) • Call pick-up (C) • Address Translation (C) • Assured Dial Tone (R)		• UCR Section 5.2.1.1.1 • UCR Section 5.2.1.1.3 • UCR Section 5.2.1.1.4 • UCR Section 5.2.1.1.5.1 • UCR Section 5.2.1.1.6 • UCR Section 5.2.1.1.7 • UCR Section 5.2.1.1.7.1 • UCR Section 5.2.1.1.7.2 • UCR Section 5.2.1.1.7.3 • UCR Section 5.2.1.1.7.4 • UCR Section 5.2.1.1.7.5 • UCR Section 5.2.1.1.7.6 • UCR Section 5.2.1.1.7.7 • UCR Section 5.2.1.1.7.8 • UCR Section 5.2.1.1.8.1 • UCR Section 5.2.1.1.8.2 • UCR Section 5.2.1.1.8.3 • UCR Section 5.2.1.1.8.4 • UCR Section 5.2.1.1.9.1 • UCR Section 5.2.1.7 • UCR Section 5.2.1.9
Attendant	No	• Attendant Features (C)		• UCR Section 5.2.1.2.2

Table 3. PBX 1 Requirements (continued)

DISN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Public Safety	Yes	• Emergency Service (911) Caller (R) • Emergency Service (911) Public Safety Answering Service (C) • Enhanced Emergency Service (E911) (C) • Trace of terminating calls (C) • Outgoing call trace (C)	• UCR Section 5.2.1.4.1.1 • UCR Section 5.2.1.4.1.2 • UCR Section 5.2.1.4.1.3 • UCR Section 5.2.1.4.2 • UCR Section 5.2.1.4.3
Conferencing	No	• Preset Conferencing (C) • Meet-Me Conferencing (C) • Progressive Conferencing (C)	• UCR Section 5.2.1.6.1 • UCR Section 5.2.1.6.2 • UCR Section 5.2.1.6.3
Nailed-up Connections	No	• Nailed-Up Connections (C)	• UCR Section 5.2.1.8
DISN Hotline Services	No	• DISN Analog Hotline Service (C)	• UCR Section 5.2.1.12
MLPP	Yes	• MLPP Overview (R) • Preemption in the Network (R) • Network Facility with Lower Precedence Calls (R) • Network Facility with Equal or Higher Precedence Calls (R) • Precedence Call Diversion (R) • Channel Associated Signaling (C) • PRI (R) • Analog Line MLPP (R) • ISDN MLPP BRI (C) • ISDN PRI (R) • Precedence Call Waiting (R) • Call Forwarding (R) • Call Transfer (R) • Call Hold (R) • Three-Way Calling (R) • Call Pickup (C) • Conferencing (C) • Multiline Hunt Group (C) • Community of Interest (C) • MLPP Interaction with EKTS features (C)	• UCR Section 5.2.2.1.1 • UCR Section 5.2.2.2 • UCR Section 5.2.2.2.1 • UCR Section 5.2.2.2.2 • UCR Section 5.2.2.3 • UCR Section 5.2.2.4.1 • UCR Section 5.2.2.4.2 • UCR Section 5.2.2.5 • UCR Section 5.2.2.6 • UCR Section 5.2.2.7 • UCR Section 5.2.2.8.1 • UCR Section 5.2.2.8.2 • UCR Section 5.2.2.8.3 • UCR Section 5.2.2.8.4 • UCR Section 5.2.2.8.5 • UCR Section 5.2.2.8.6 • UCR Section 5.2.2.8.7.1 • UCR Section 5.2.2.8.8 • UCR Section 5.2.2.8.9 • UCR Section 5.2.2.10.1

Table 3. PBX 1 Requirements (continued)

Feature/ Capability	Critical	Requirements Required or Conditional	References
DISN Features & Capabilities (continued)			
Call Processing	Yes	• Call Treatments (R) • Primary and Alternate Routing (C) • E&M Lead Signaling States (C) • 4-Wire Analog User Access Lines (C) • 2-Wire User Access Lines (R) • Termination of Analog Lines (R) • DISN User Dialing (R) • Interswitch and Intraswitch Dialing (R) • Seven-Digit Dialing (R) • Ten-Digit Dialing (R) • Access Code (R) • Access Digit (R) • Precedence Digit (R) • Service Digit (R) • Route Code (R) • Area Code (R) • Switch Code (R) • Line Number (R) • Calling Name Delivery (C) • Calling Number Delivery (R) • Emergency Service 911 Conflict Resolution (R) • DISN Switch Outpulsing Digit Formats (C) • Standard Directory Number (R) • Standard Test Numbers (C) • Base Services – Abbreviated Numbers (C) • Digit Reception Requirements (R) • Screening (C)	• UCR Section 5.2.3.1 • UCR Section 5.2.3.2 • UCR Section 5.2.3.3.1 • UCR Section 5.2.3.3.2 • UCR Section 5.2.3.3.3 • UCR Section 5.2.3.3.4 • UCR Section 5.2.3.5.1.1 • UCR Section 5.2.3.5.1.1 • UCR Section 5.3.3.5.2.1 • UCR Section 5.2.3.5.2.2 • UCR Section 5.2.3.5.1.3 • UCR Section 5.2.3.5.1.3.1 • UCR Section 5.2.3.5.1.3.2 • UCR Section 5.2.3.5.1.3.3 • UCR Section 5.2.3.5.1..4 • UCR Section 5.2.3.5.1.5 • UCR Section 5.2.3.5.1.6 • UCR Section 5.2.3.5.1.7 • UCR Section 5.2.3.5.1.8.1 • UCR Section 5.2.3.5.1.8.2 • UCR Section 5.2.3.5.1.9 • UCR Section 5.2.3.5.2 • UCR Section 5.2.3.5.3 • UCR Section 5.2.3.5.4 • UCR Section 5.2.3.5.5 • UCR Section 5.2.3.5.6 • UCR Section 5.2.3.5.8
ISDN Services	Yes	• BRI Access, Call Control and Signaling (C) • Uniform Interface Configuration for BRIs (C) • EKTS (C) • PRI Access, Call Control and Signaling (R) • PRI Features (R) • Packet Data Features and Capabilities (C)	• UCR Section 5.2.9.2, Table 5.2.9-1 • UCR Section 5.2.9.2, Table 5.2.9-2 • UCR Section 5.2.9.3, Table 5.2.9-3 • UCR Section 5.2.9.2, Table 5.2.9-4 • UCR Section 5.2.9.2, Table 5.2.9-5 • UCR Section 5.2.9.2, Table 5.2.9-6
Synchronization	Yes	• Line timing mode (R) • Internal Stratum 4 (R) • Synchronization Performance Monitoring Criteria (C) • DS1 Traffic Interfaces (C) • DS0 Traffic Interconnects (C)	• UCR Section 5.2.10.1.1.2 • UCR Section 5.2.10.1.1.2.2 • UCR Section 5.2.10.2 • UCR Section 5.2.10.3 • UCR Section 5.2.10.4
Reliability	Yes	• System Availability (R) • Backup Power (R) • Power Components (R) • UPS Requirements (R) • UPS PBX 1 Load Capacity (R) • Backup Power (Environmental) (R) • Alarms (R)	• UCR Section 5.2.11.2 • UCR Section 5.2.11.3 • UCR Section 5.2.11.3.1 • UCR Section 5.2.11.3.2 • UCR Section 5.2.11.3.2.1 • UCR Section 5.2.11.3.3 • UCR Section 5.2.11.3.4
Network Management	No	• Interfaces (R) • Measurements and data generation (C) • Fault management (C) • Configuration management (C) • Accounting management (C) • Performance management (C) • Network Management controls (C) • Remote access (C)	• UCR section 5.2.8.1 • UCR section 5.2.8.2 • UCR section 5.2.8.3 • UCR section 5.2.8.4 • UCR section 5.2.8.5 • UCR section 5.2.8.6 • UCR section 5.2.8.7 • UCR section 5.2.8.8
Security	Yes	• GR-815, STIGs, and DoDI 8510.bb (DIACAP) (R)	• UCR Sections 3.2.3, 3.2.5, and 5.4.6.1

Table 3. PBX 1 Requirements (continued)

VoIP			
Feature/ Capability	**Critical**	**Requirements Required or Conditional**	**References**
VoIP System	No	VoIP function is conditional. If VoIP is provided, **all** of the following requirements must be met: • Voice Quality with MOS of 4.0 or better (R) • ITU-T G.711 PCM CODEC (R) • MLPP (R) • Security (R) • Network management (C) • System timing (R) • Latency ≤ 60 milliseconds (R) • IPv6 capable (R) • Service Class Tagging (R) • Softphone Requirements	• UCR section 5.2.12.8.2.1 • UCR section 5.2.12.8.2.2 • UCR section 5.2.12.8.2.3 • UCR section 5.2.12.8.2.4 • UCR section 5.2.12.8.2.5 • UCR section 5.2.12.8.2.6 • UCR section 5.2.12.8.2.7 • UCR section 5.2.12.8.2.8 • UCR section 5.2.12.8.2.9 • DISA Memo Reference (h)
Network Gateways			
Gateway	**Critical**	**Requirements Required or Conditional**	**References**
PSTN (See note.)	No	Trunking • Positive Identification Control (C) • On-Netting (C) • Off-Netting (C) • Ground Start Line (R) • Immediate Start (C) • Delay Dial (C)	• CJCSI 6215.01C • CJCSI 6215.01C • CJCSI 6215.01C • UCR Section 5.2.4.2.2 • UCR Section 5.2.4.3.2 • UCR Section 5.2.4.3.4
NOTE: Voice, facsimile, data, and VTC service requirements for PSTN are identical to DISN with the exception of MLPP.			

Table 3. PBX 1 Requirements (continued)

LEGEND:							
ANSI	American National Standards Institute	FTR	Federal Telecommunications Recommendation	PBX 1	Private Branch Exchange 1		
BER	Bit Error Ratio			PCM	Pulse Code Modulation		
BRI	Basic Rate Interface	FTR 1080B-2002	Video Teleconferencing Services	PCM-24	Pulse Code Modulation - 24 Channels		
C	Conditional	G.711	PCM of voice frequencies	PCM-30	Pulse Code Modulation - 30 Channels		
CAS	Channel Associated Signaling	GR	Generic Requirement				
		GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security	PRI	Primary Rate Interface		
CJCSI	Chairman of the Joint Chiefs of Staff Instruction			PSTN	Public Switched Telephone Network		
CODEC	Coder/Decoder	H.320	Standard for Narrowband VTC	Q.955.3	ISDN Signaling Standard for E1 MLPP		
DIACAP	DoD Information Assurance Certification and Accreditation Process	IEEE	Institute of Electrical and Electronics Engineers	R	Required		
		IPv6	Internet Protocol version 6	S/T	ISDN BRI four-wire interface		
DISA	Defense Information Systems Agency	ISDN	Integrated Services Digital Network	SS7	Signaling System 7		
				STE	Secure Terminal Equipment		
DISR	DoD IT Standards Registry	IT	Information Technology	STIGs	Security Technical Implementation Guides		
DoD	Department of Defense	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	STU-III	Secure Telephone Unit -3rd generation		
DoDI	DoD Instruction						
DP	Dial Pulse						
DS0	Digital Signal Level 0 (64 kbps)	kbps	kilobits per second	T.4	Standardization of Group 3 facsimile terminals for document transmission		
DS1	Digital Signal Level 1 (1.544 Mbps) (2.048 Mbps European)	Mbps	Megabits per second				
		MFR1	Multi-Frequency Recommendation 1	T1	Digital Transmission Link Level 1 (1.544 Mbps)		
DISN	Defense Switched Network	MLPP	Multi-Level Precedence and Preemption	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1		
DSS1	Digital Subscriber Signaling 1	MOS	Mean Opinion Score	UCR	Unified Capabilities Requirements		
DTMF	Dual Tone Multi-Frequency	NI 1/2	National ISDN Standard 1 or 2				
E&M	Ear and Mouth	NX56	Data format restricted to multiples of 56 kbps	UPS	Uninterruptible Power Supply		
E1	European Basic Multiplex Rate (2.048 Mbps)			VBD	Variable bit data		
		NX64	Data format restricted to multiples of 64 kbps	VoIP	Voice over Internet Protocol		
EKTS	Electronic Key Telephone System	PBX	Private Branch Exchange	VTC	Video Teleconferencing		

5. In accordance with the Program Manager's request, the JITC did not prepare a detailed test report. The JITC distributes interoperability information via the JITC Electronic Report Distribution system, which uses Non-secure Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet). Information related to Defense Information System Network (DISN) testing is on the Telecom Switched Services Interoperability website at http://jitc.fhu.disa.mil/tssi. All associated data is available on the Defense Information Systems Agency Unified Capability Coordination Office (UCCO) website located at http://www.disa.mil/ucco/.

JITC Memo, JTE, Extension of Special Interoperability Test Certification of the Siemens HiPath 4000 from Version 5.0 to Version 6.0

6. The JITC point of contact is Mr. Cary Hogan, DSN 879-2589, commercial (520) 538-2589, FAX DSN 879-4347, or e-mail to cary.hogan@disa.mil. JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0923002.

FOR THE COMMANDER:

1 Enclosure a/s   for BRADLEY A. CLARK
                                                         Chief
                                                         Battlespace Communications Portfolio

Distribution (electronic mail):
Joint Staff J-6
Joint Interoperability Test Command, Liaison, TE3/JT1
Office of Chief of Naval Operations, CNO N6F2
Headquarters U.S. Air Force, Office of Warfighting Integration & CIO, AF/XCIN (A6N)
Department of the Army, Office of the Secretary of the Army, DA-OSA CIO/G-6 ASA (ALT), SAIS-IOQ
U.S. Marine Corps MARCORSYSCOM, SIAT, MJI Division I
DOT&E, Net-Centric Systems and Naval Warfare
U.S. Coast Guard, CG-64
Defense Intelligence Agency
National Security Agency, DT
Defense Information Systems Agency, TEMC
Office of Assistant Secretary of Defense (NII)/DoD CIO
U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities
    Division, J68
Defense Information Systems Agency, GS23

(This page intentionally left blank.)

ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command, "Special Interoperability Test Certification of Siemens HiPath 4000 Version 5 (TN 0923002)," 4 January 2011

(d) Office of the Assistant Secretary of Defense Document, "Department of Defense Unified Capabilities Requirements 2008," 22 January 2009.

(e) Joint Interoperability Test Command Document, "Unified Capabilities Test Plan (UCTP)"

(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Siemens HiPath 4000 Version 5 (TN0923002)," 4 January 2011

Enclosure 1

(This page left intentionally blank.)